

FOUNDEN Design Project Guideline

STUDENT OUTCOME – PERFORMANCE INDICATORS	ASSESSMENT METHODS
C1. The student can design a system (or component or process) that conforms to standards and codes and realistic constraints	Design Project
E3. The student can formulate a solution and/or alternative solution in an analytical manner with appropriate validation.	Design Project

STUDENT COURSE OUTPUT:

As evidence of attaining the above learning outcomes, the student is required to do and submit the following during the indicated dates of the term.

LEARNING OUTCOME	ASSESSMENT	DUE DATE
LO4	Design Project	13 th Week

DESIGN PROJECT DESIGN CONSIDERATIONS (CONSTRAINTS):

1. The design meets the minimum requirements of the National **Structural Code** of the Philippines (NSCP);
2. The most **economical** design is considered in the design;
3. **Environmental** concerns such as *geological, geotechnical, seismological* conditions of the site are considered in the design;
4. **Constructability** of the design which includes the considerations on the availability of *materials, equipment, and manpower resources*;
5. Design that considers the **safety** of the builders and the end-users of the project.

RUBRIC FOR THE ASSESSMENT OF THE DESIGN PROJECT:

A satisfactory rating with a score of 3.0 is given if the minimum requirements are satisfied. Add 0.5 if there is a manifestation of the properties for the higher score (e.g., 3.5 means that there are exemplary features in the corresponding criterion). The rating is computed as follows: $R = \text{Percentage Value} \times (\text{Score}/4)$

CRITERIA	EXEMPLARY 4	SATISFACTOR Y 3	DEVELOPING 2	BEGINNING 1	R
Design Criteria / Structural Analysis (20%)	The design criteria and structural analysis are complete. Structural plans are drawn showing the labels, dimensions and drawn to scale. The drawing is exemplary.	The design criteria and structural analysis are complete. The drawing is satisfactory.	The design criteria and structural analysis are satisfactory but some items are incomplete. Poor drawing.	The design criteria and structural analysis are unsatisfactory. Many items are missing.	
Consideration of Environmental parameters (10%)	The three (3) environmental concerns were considered in the	Only two (2) environmental concerns were considered in the	Only one (1) environmental concern was considered in the	Environmental concerns were not considered in the design.	

	<i>design of the foundation.</i>	<i>design of the foundation.</i>	<i>design of the foundation.</i>		
Design and structural detailing of foundation (40%)	<i>Structural detailing of the foundation is complete with sizes, spacing and reinforcement details. The design is economical and practical.</i>	<i>Structural detailing of the foundation is complete with sizes, spacing and reinforcement details.</i>	<i>Structural detailing of the foundation is satisfactory but incomplete (sizes, spacing and reinforcement details)</i>	<i>Structural detailing of the foundation is unsatisfactory and incomplete.</i>	
Constructability considerations (20%)	<i>Availability of materials, equipment, and manpower resources were considered in the design of the foundation including material and labor cost estimates</i>	<i>The three (3) constructability considerations were considered in the design of the foundation</i>	<i>Only two (2) constructability considerations were considered in the design of the foundation.</i>	<i>Only one (1) constructability consideration was considered in the design of the foundation.</i>	
Team Effort/Interaction and ability (10%)	<i>All group members worked cooperatively with excellent team effort to achieve the objectives of the design project following the prescribed directions</i>	<i>Most group members worked cooperatively with strong effort to achieve the objectives of the design project following the majority of the prescribed directions</i>	<i>Some group members worked cooperatively with good effort to achieve the objectives of the design project and had trouble following the prescribed directions</i>	<i>Some group members worked cooperatively with minor effort to achieve the objectives of the design project</i>	
				TOTAL:	

GRADING SYSTEM:

1. General Average The general average of each student's grade will be computed as follows:

- Quizzes - 40%
 - Design Project - 35%
 - Final Examination - 20%
 - Short Quizzes: CYU / Attendance - 5%
- TOTAL 100%

Instructions:

- a. This is a **GROUP** work and as such you will submit only one final design project report
- b. Design the shallow foundations of your assigned school as shown below:
 - square footing
 - rectangular footing
 - combined footing
- c. Estimate the quantity of materials, e.g. cement, sand, gravel, reinforcement etc. of each foundation in item b.
- d. Calculate the total cost of the materials based on item b and c
- e. In the design criteria show the following

- Approximate location of the building (in this case Valenzuela City)
 - Earthquake parameters using NSCP 2015
 - Design parameters such as f_c' , f_y , etc.
- f. Show the detailed calculation of the foundation and optimization of the design using several trial designs.
- g. Submit Design Project through AnimoSpace